

WHAT IS CLAIMED IS:

1. A router for interconnecting external devices coupled to said router, said router comprising:

a switch fabric; and

a plurality of routing nodes coupled to said switch fabric, wherein each of said plurality of routing nodes comprises: i) packet processing circuitry capable of exchanging data packets with external devices and exchanging data packets with other ones of said plurality of routing nodes via said switch fabric and ii) control processing circuitry capable of performing control and management functions, wherein said control processing circuitry comprises:

a first network processor capable of performing control and management functions associated with said router; and

a second network processor capable of performing said control and management functions associated with said router, wherein said control and management functions are dynamically allocated between said first network processor and said second network processor.

2. The router as set forth in Claim 1 wherein said control and management functions are dynamically allocated between said first network processor and said second network processor according to a first level of activity of control and management functions in said first network processor relative to a second level of activity of control and management functions in said second network processor.

3. The router as set forth in Claim 2 wherein said first network processor is controlled by first control software code and said second network processor is controlled by second control software code substantially identical to said first control software code.

4. The router as set forth in Claim 3 wherein said first network processor determines a first group of control and management functions allocated to said first network processor by examining a configuration register associated with said first network processor.

5. The router as set forth in Claim 4 wherein said second network processor determines a second group of control and management functions allocated to said second network processor by examining a configuration register associated with said second network processor.

6. The router as set forth in Claim 5 wherein a first one of said control and management functions may be re-allocated from said first group of control and management functions to said second group of control and management functions by modifying the contents of said first configuration register and said second configuration register.

7. The router as set forth in Claim 6 wherein said first network processor is a master device with respect to said first group of control and management functions and said second network processor is a slave device with respect to said first group of control and management functions.

8. The router as set forth in Claim 7 wherein said first network processor is a slave device with respect to said second group of control and management functions and said second network processor is a master device with respect to said second group of control and management functions.

9. The router as set forth in Claim 8 wherein said first network processor processes data packets being transmitted from said external devices to said switch fabric.

10. The router as set forth in Claim 9 wherein said second network processor processes data packets being transmitted from said switch fabric to said external devices.

11. A communication network comprising a plurality of routers that communicate data packets to one another and to interfacing external devices, each of said plurality of routers comprising:

a switch fabric; and

a plurality of routing nodes coupled to said switch fabric, wherein each of said plurality of routing nodes comprises: i) packet processing circuitry capable of exchanging data packets with external devices and exchanging data packets with other ones of said plurality of routing nodes via said switch fabric and ii) control processing circuitry capable of performing control and management functions, wherein said control processing circuitry comprises:

a first network processor capable of performing control and management functions associated with said router; and

a second network processor capable of performing said control and management functions associated with said router, wherein said control and management functions are dynamically allocated between said first network processor and said second network processor.

12. The communication network as set forth in Claim 11 wherein said control and management functions are dynamically allocated between said first network processor and said second network processor according to a first level of activity of control and management functions in said first network processor relative to a second level of activity of control and management functions in said second network processor.

13. The communication network as set forth in Claim 12 wherein said first network processor is controlled by first control software code and said second network processor is controlled by second control software code substantially identical to said first control software code.

14. The communication network as set forth in Claim 13 wherein said first network processor determines a first group of control and management functions allocated to said first network processor by examining a configuration register associated with said first network processor.

15. The communication network as set forth in Claim 14 wherein said second network processor determines a second group of control and management functions allocated to said second network processor by examining a configuration register associated with said second network processor.

16. The communication network as set forth in Claim 15 wherein a first one of said control and management functions may be re-allocated from said first group of control and management functions to said second group of control and management functions by modifying the contents of said first configuration register and said second configuration register.

17. The communication network as set forth in Claim 16 wherein said first network processor is a master device with respect to said first group of control and management functions and said second network processor is a slave device with respect to said first group of control and management functions.

18. The communication network as set forth in Claim 17 wherein said first network processor is a slave device with respect to said second group of control and management functions and said second network processor is a master device with respect to said second group of control and management functions.

19. The communication network as set forth in Claim 18 wherein said first network processor processes data packets being transmitted from said external devices to said switch fabric.

20. The communication network as set forth in Claim 19 wherein said second network processor processes data packets being transmitted from said switch fabric to said external devices.

21. For use in a router comprising a switch fabric and a plurality of routing nodes coupled to the switch fabric, each of the routing nodes capable of exchanging data packets with external devices and exchanging data packets with other routing nodes via the switch fabric, a method of distributing control and management functions comprising the steps of:

performing a first group of control and management functions in a first network processor, wherein the control and management functions in the first group are determined by the contents of a first configuration register of the first network processor;

performing a second group of control and management functions in a second network processor, wherein the control and management functions in the second group are determined by the contents of a second configuration register of the second network processor; and

re-allocating control and management functions between the first network processor and the second network processor according to a first level of activity of control and management functions in the first network processor relative to a second level of activity of control and management functions in the second network processor.

22. The method as set forth in Claim 21 wherein the first network processor is controlled by first control software code and the second network processor is controlled by second control software code substantially identical to the first control software code.

23. The method as set forth in Claim 21 wherein the step of re-allocating comprises the sub-step of modifying the contents of the first configuration register and the second configuration register.